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Product Identification Techniques Used as Training Aids for Analytical Chemists

Laboratory staff assistants who are required to analyze compounds for potential toxic hazards are given a program of instruction aimed at broadening their approach to the analysis of an unknown. In a laboratory equipped with an emission spectrograph, a gas chromatograph, infrared and ultraviolet spectrophotometers, and an atomic absorption spectrophotometer, an assistant often lacks the feeling, based on experience, that using a particular instrument rather than another would give more meaningful information. The training program, therefore, is based on data and observations gathered in routine product analyses performed by experienced analytical chemists. In addition, commercial products are used as examples in teaching the analytical approach to unknowns.

The result of these training sessions conducted in the laboratory is increased confidence in the assistant's ability to cope with samples as received. He learns to identify reaction "signatures" that denote typical classes of compounds. He learns to disregard irrelevant data, and to select judiciously the tests and tools necessary for accurate analysis.

Sandia Laboratories report SC-M-67-2939, *The Use of Product Identification as a Training Aid for*

Analytical Chemists, by J. P. Grillo, provides information on the training program, including analysis training procedures, sample problems, worksheets, and a bibliography of analytical references used.

Notes:

1. These procedures could be adapted for use in any analytical chemistry laboratory, including hospital labs and poison control centers. They would also give university chemistry curriculum directors an idea of the requirements their graduates are likely to encounter.
2. This report is available from:

Sandia Office of Industrial Cooperation,
Org. 3416
Sandia Laboratories
Post Office Box 5800
Albuquerque, New Mexico 87115
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Patent status:

No patent action is contemplated by AEC or NASA.

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(SAN-10025)

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